Louisville Metro Air Pollution Control District
701 West Ormsby Avenue, Suite 303
Louisville, Kentucky 40203-3137

25 January 2019

Federally Enforceable District Origin Operating Permit
Statement of Basis

Source:	Atkemix Ten Incorporated -Louisville 6100 Camp Ground Road Louisville, KY 40216	**Owner:**	Atkemix Ten Incorporated 1800 Concord Pike, PO Box 15437 Wilmington, DE 19850-5437

Application Documents:	See Table 8 in section I				
Public Comment Date:	12/18/2018				
Permitting Engineer:	Martin J Hazelett			Permit Number:	O-1225-18-F
Plant ID:	1225	SIC:	8711	NAICS:	541330

Introduction:

This permit will be issued pursuant to District Regulation 2.17- *Federally Enforceable District Origin Operating Permits*. Its purpose is to limit the plant wide potential emission rates from this source to below major source threshold levels and to provide methods of determining continued compliance with all applicable requirements.

This is a standard FEDOOP permit renewal. This action also updates the permit format and equipment lists.

Jefferson County is classified as an attainment area for lead (Pb), nitrogen dioxide (NO_2), carbon monoxide (CO), particulate matter less than 10 microns (PM_{10}), and particulate matter less than 2.5 microns ($PM_{2.5}$). Jefferson County is classified as a nonattainment area for ozone (O_3). This facility is located in the portion of Jefferson County that is an attainment area for sulfur dioxide (SO_2).

Permit Application Type:

☐ Initial issuance

Permit Revision
- ☐ Administrative
- ☐ Minor
- ☐ Significant

☒ Permit renewal

Compliance Summary

☐ Compliance certification signed
☐ Source is out of compliance
☐ Compliance schedule included
☒ Source is operating in compliance

I. Source Information

1. Product Description: Remediation, RCRA corrective action interim source control; not engaged in producing a product.

2. Process Description: The source is operating two soil vapor extraction systems and one air stripper for the purpose of soil and groundwater remediation controlled by a dual bed carbon adsorption system.

3. Site Determination: There are no other facilities that are contiguous or adjacent to this facility

4. Emission Unit Summary:

Emission Unit	Equipment Description
U1	E1: One (1) Production Area SVE (Soil Vapor Extraction), make Roots, model URA1718, capacity 1200 acfm, control ID C1, stack ID S1; E2: One (1) Curtain Area SVE (Soil Vapor Extraction), make Rotron Chemical Processing Series, model DR909BE72MW, capacity 600 acfm, control ID C1, stack ID S1; and E3: One (1) Air Stripper, make New York Blower Company, model 404 SER 35 GIDH ARR'GT.8, capacity 7200 acfm at 36" WG; all venting to One (1) dual-bed Carbon Absorption System, make VIC Environmental Systems, model 5108 AD Carbon Adsorption System, capacity 7200 acfm at 70°F, control ID C1, stack ID S1.
IA1	E4: Boiler, Power Flame Burner, C2-G-20A, natural gas 2.5 MMBtu/hr, Columbia Boiler, Model MPH-50, Firebox HX

5. Fugitive Sources: There are no fugitive emissions.

6. Permit Revisions:

Permit No.	Public Notice Date	Issue Date	Change Type	Description/Scope
149-02-F	06/23/2002	08/01/2002	Initial	Initial Permit Issuance
149-02-F(R1)	03/01/2013	04/18/2013	Renewal	Scheduled Renewal and incorporation of construction permit 264-01-C(R1)
O-1225-15-F	11/05/2015	12/10/2015	Significant	Incorporate STAR Exempt limits and remove TAC limits
O-1225-18-F	12/18/2018	01/25/2019	Renewal	Permit Renewal

7. Construction Permit History:

Permit No.	Effective Date	Description
264-01-C(R1)	2/28/2013	One (1) Production Area SVE (Soil Vapor Extraction), make Roots, model URA1718, capacity 1200 scfm; One (1) Curtain Area SVE, make Rotron Chemical Processing Series, model CP909FJ72WLR, capacity 600 scfm; and One (1) Air Stripper, make New York Blower Company, model 404 SER 35 GIDH ARR'GT.8, capacity 7200 acfm at 36" WG; all venting to One (1) dual-bed Carbon Absorption System, make VIC Environmental Systems, model 5108 AD Carbon Adsorption System, capacity 7200 scfm at 70°F, stack ID

8. Permit Renewal-Related Documents

Document Number	Date Received	Description
N/A	08/31/2001	FEDOOP Permit – 149-02-F
17756	05/07/2007	FEDOOP Permit – 149-02-F(R1)
73295	08/31/2015	FEDOOP Permit – O-1225-15-F – STAR Exempt
89710	12/21/2017	Atkemix Ten Inc (1225) link for APCD permit application
90036	01/04/2018	Re 20171221 Atkemix Ten Inc (1225) link for APCD permit application
90349	02/01/2018	Re 20171221 Atkemix Ten Inc (1225) link for APCD permit application
90350	20/02/2018	Re 20171221 Atkemix Ten Inc (1225) link for APCD permit application
9094	02/28/2018	Application AP100A, C, D, E, H, J, K, P, and payment 1225
91027	03/06/2018	Request for certificate of authorization existence
91335	03/23/2018	Atkemix Ten Inc LAPCD-requested supplemental info
92823	07/02/2018	Atkemix Ten Inc Final information for permit renewal completion
93728	08/24/2018	Atkemix Ten Inc Final information for permit renewal completion
94119	08/30/2018	Atkemix Ten Inc Final information for permit renewal completion
95377	10/29/2018	Approved Atkemix PTE Plantwide

Document Number	Date Received	Description
96215	11/27/2018	Pre-Draft permit sent to company for review
96506	12/14/2018	Company comments on pre-draft
96589	01/02/2019	Official Company comments on draft permit

9. Plantwide Emission Summary:

Pollutant	District Calculated Actual Emissions (ton/yr) 2009 Data	Pollutant that triggered Major Source Status (based on PTE)
CO	N/A	No
NO_x	N/A	No
SO_2	N/A	No
PM_{10}	N/A	No
VOC	0.2759	Yes
Total HAPs	0.3503	Yes
Single HAP	0.144	Yes

10. Applicable Requirements

☐	40 CFR 60	☒	SIP	☐	40 CFR 63
☐	40 CFR 61	☒	District Origin	☐	Other

11. Referenced MACT Federal Regulations: There are no MACT federal regulations for this source.

12. Referenced non-MACT Federal Regulations: There are no non-MACT federal regulations for this source.

II. Regulatory Analysis

1. Acid Rain Requirements: Atkemix Ten is not subject to the Acid Rain Program.

2. Stratospheric Ozone Protection Requirements: Title VI of the CAAA regulates ozone depleting substances and requires a phase-out of their use. This rule applies to any facility that manufactures, sells, distributes, or otherwise uses any of the listed chemicals. Atkemix Ten does not manufacture, sell, or distribute any of the listed chemicals. The source's use of listed chemicals is

that in fire extinguishers, chillers, air conditioners and other HVAC equipment.

3. Prevention of Accidental Releases 112(r): Atkemix Ten does not manufacture, process, use, store, or otherwise handle one or more of the regulated substances listed in 40 CFR Part 68, Subpart F, and District Regulation 5.15, *Chemical Accident Prevention Provisions*, in a quantity in excess of the corresponding specified threshold amount.

4. Basis of Regulation Applicability

a. **Plantwide**

Atkemix Ten is a potential major source for the criteria pollutant VOC and single and total HAPs. Regulation 2.17 – F*ederally Enforceable District Origin Operating Permits* establishes requirements to limit the plant wide potential emission rates to below major source threshold levels and to provide methods of determining continued compliance with all applicable requirements. The source requested limits of the criteria pollutant VOC < 25 ton/yr, and Total HAPs < 12.5 ton/yr and largest single HAP < 5.0 ton/yr, to be a FEDOOP STAR Exempt soured as defined by Regulation 5.00, section 1.13.5.

Regulation 2.17, section 5.2, requires monitoring and record keeping, to assure ongoing compliance with the terms and conditions of the permit. The owner or operator shall maintain all the required records for a minimum of 5 years and make the records readily available to the district upon request.

Regulation 2.17, section 7.2, requires stationary sources for which a FEDOOP is issued to submit an Annual Compliance Certification by April 15, of the following calendar year. In addition, as required by Regulation 2.17, section 5.2, the source shall submit an Annual Compliance Report to show compliance with the permit, by March 1 of the following calendar year. Compliance reports and compliance certifications shall be signed by a responsible official and shall include a certification statement per Regulation 2.17, section 3.5.

b. **Emission Unit U1 –** Soil and Groundwater Remediation Operation

i. **Equipment:**

Emission Point	Description	Applicable Regulation	Basis for Applicability
E1	One (1) Production Area SVE (Soil Vapor Extraction), make Roots, model URA1718, 1200 acfm, installed 8/6/1996;	7.25	Regulation 7.25 Establishes the requirements for VOC emissions, applies to a

Emission Point	Description	Applicable Regulation	Basis for Applicability
	modified 7/23/2001		process not elsewhere regulated in District Regulations
E2	One (1) Curtain Area SVE, make Rotron Chemical, Processing Series, model DR909BE72MW, 600 acfm, installed 8/6/1996, modified 7/23/2001		
E3	One (1) Air Stripper, make New York Blower Company, model 404 SER 35 GIDH ARR'GT.8, 7200 acfm at 36" WC, installed 8/6/1996; modified 7/23/2001		

ii. **Standards/Operating Limits**

(a) See Plantwide.

2) **VOC**

(a) See Plantwide.

(b) Regulation 7.25 establishes VOC emission limits of less than twenty-five (25) tons during any consecutive 12-month period through Best Available Control Technology (BACT). The District has determined the carbon adsorption unit represents BACT level control.

III. Other Requirements

1. Temporary Sources: The source did not request to operate any temporary facilities.

2. Short Term Activities: The source did not report any short term activities.

3. Emissions Trading: N/A

4. Alternative Operating Scenarios: The source did not request any alternative operating scenarios.

5. Compliance History: There were no notices of violation issued to this facility.

6. Calculation Methodology or Other Approved Method:

The owner or operator shall calculate emissions using emission factors and equations in this attachment unless other methods are approved in writing by the District.

E1, E2, E3: Soil and Groundwater Remediation Operation

The emission calculations are based upon the concentration of pollutant measured in the air stream each month, and the average air flow for each month.

Equation to calculate total tons per month of VOC and HAPs:

Tons/month = [(Operating time in days)*(1,440 min/day)*(Flow in ft^3/min)*(**Concentration in PPMV**/1,000,000)*(MW in lb/lb mole)] / [(385.6 ft^3/lb mole)*(2000 lb/ton)][1]

MW- molecular weight

Tons/month = [(Operating time in days)*(1,440 min/day)*(Flow in ft^3/min)*(**Concentration in ug/m^3**)*(m3/35.32 ft^3)*(lb/(453.6 x 10^6 ug))] / [(2000 lb/ton)][1]

E4: Boiler Emission Factors

Emission Source	Pollutant	Natural Gas Emission Factor ($lb/10^6$ scf natural gas combusted)		Emission Factor Source
		Uncontrolled	Controlled	
E4	NOx	100	100	AP-42, 1.4-1
	CO	84	84	AP-42, 1.4-1
	PM	0.52	0.52	Roy Huntley, EPA
	PM condensable	0.32	0.32	Roy Huntley, EPA
	PM_{10}	0.52	0.52	Roy Huntley, EPA
	$PM_{2.5}$	0.43	0.43	Roy Huntley, EPA
	SO_2	0.6	0.6	AP-42, 1.4-2
	VOC	5.5	5.5	AP-42, 1.4-2
	Lead	0.0005	0.0005	AP-42, 1.4-3
	NH_3	3.2	3.2	EPA WebFIRE

1 Measured airflow in ACFM shall be corrected to 68 degrees Fahrenheit for this calculation

E = (X) * (EF lb/10^6 scf) * (1 ton/2000 lb.)
Where: E = emissions (tons)
X = the amount of natural gas combusted (10^6 scf)
[AP-42 EF (lb/MMBtu) converted to (lb/10^6 scf) natural gas combusted]

E4: Boiler Emission Factors

Emission Source	Individual HAP/TAC	CAS	Natural Gas Emission Factor (lb/10^6 scf natural gas combusted)		Emission Factor Source
			Uncontrolled	Controlled	
E4	Benzene	71-43-2	2.10E-03	2.10E-03	AP-42, 1.4-3
	Dichlorobenzene	25321-22-6	1.20E-03	1.20E-03	AP-42, 1.4-3
	Formaldehyde	50-00-0	7.50E-02	7.50E-02	AP-42, 1.4-3
	Hexane	110-54-3	1.80E+00	1.80E+00	AP-42, 1.4-3
	Toluene	108-88-3	3.40E-03	3.40E-03	AP-42, 1.4-3
	Total POMs		6.98E-04	6.98E-04	
	2-Methylnaphthalene (POM)	91-57-6	2.40E-05	2.40E-05	AP-42, 1.4-3
	3-Methylchloranthrene (POM)	56-49-5	1.80E-06	1.80E-06	AP-42, 1.4-3
	DMBA (POM)	57-97-6	1.60E-05	1.60E-05	AP-42, 1.4-3
	Acenaphthene (POM)	83-32-9	1.80E-06	1.80E-06	AP-42, 1.4-3
	Acenaphthylene (POM)	208-96-8	1.80E-06	1.80E-06	AP-42, 1.4-3
	Anthracene (POM)	120-12-7	2.40E-06	2.40E-06	AP-42, 1.4-3
	Benz(a)anthracene (POM)	56-55-3	1.80E-06	1.80E-06	AP-42, 1.4-3
	Benzo(a)pyrene (POM)	50-32-8	1.20E-06	1.20E-06	AP-42, 1.4-3
	Benzo(b)fluoranthene (POM)	205-99-2	1.80E-06	1.80E-06	AP-42, 1.4-3
	Benzo(g,h,i)perylene (POM)	191-24-2	1.20E-06	1.20E-06	AP-42, 1.4-3
	Benzo(k)fluoranthene (POM)	205-82-3	1.80E-06	1.80E-06	AP-42, 1.4-3
	Chrysene (POM)	218-01-9	1.80E-06	1.80E-06	AP-42, 1.4-3
	Dibenzo(a,h)anthracene (POM)	53-70-3	1.20E-06	1.20E-06	AP-42, 1.4-3
	Fluoranthene (POM)	206-44-0	3.00E-06	3.00E-06	AP-42, 1.4-3
	Fluorene (POM)	86-73-7	2.80E-06	2.80E-06	AP-42, 1.4-3
	Indeno(1,2,3-cd)pyrene (POM)	193-39-5	1.80E-06	1.80E-06	AP-42, 1.4-3
	Naphthalene (POM)	91-20-3	6.10E-04	6.10E-04	AP-42, 1.4-3
	Phenanathrene (POM)	85-01-8	1.70E-05	1.70E-05	AP-42, 1.4-3
	Pyrene (POM)	129-00-0	5.00E-06	5.00E-06	AP-42, 1.4-3
	Arsenic	7440-38-2	2.00E-04	2.00E-04	AP-42, 1.4-4
	Beryllium	7440-41-7	1.20E-05	1.20E-05	AP-42, 1.4-4
	Cadmium	7440-43-9	1.10E-03	1.10E-03	AP-42, 1.4-4
	Chromium	7440-47-3	1.40E-03	1.40E-03	AP-42, 1.4-4

Emission Source	Individual HAP/TAC	CAS	Natural Gas Emission Factor (lb/10^6 scf natural gas combusted)		Emission Factor Source
			Uncontrolled	Controlled	
	Cobalt	7440-48-4	8.40E-05	8.40E-05	AP-42, 1.4-4
	Manganese	7439-96-5	3.80E-04	3.80E-04	AP-42, 1.4-4
	Mercury	7439-97-6	2.60E-04	2.60E-04	AP-42, 1.4-4
	Nickel	7440-02-0	2.10E-03	2.10E-03	AP-42, 1.4-4
	Selenium	7782-49-2	2.40E-05	2.40E-05	AP-42, 1.4-4

$E_{(HAP)} = (X)\ (EF\ lb/10^6\ scf)\ (1\ ton/2000\ lb.)$

Where: $E_{(HAP)}$ = emissions (tons)
X = the amount of natural gas combusted (10^6 scf)
[AP-42 EF (lb/MMBtu) converted to (lb/10^6 scf) natural gas combusted]

Emission Factors for Tanks

Emission Source	Pollutant	Emission Factor (lb/gallon)	Emission Factor Source
VOC Storage Tanks 250 gal or less	VOC	N/A	Emissions accounted for in the working losses for the storage tanks below using AP-42 evaporative losses.
Organics Tank (T202) carbon steel, glass lined, closed tank, vented to C1, 5000 gallons	VOC	N/A	Emissions accounted for in the working losses for the storage tanks below using AP-42 evaporative losses.

Welding Emission Factors

Emission Source	Pollutant	Emission Factor Uncontrolled (0.1 lb/1000 lb of electrode consumed)	Emission Factor Source
E3-E17	PM	52	AP-42, 12.9-1
	PM_{10}	52	AP-42, 12.9-1
	$PM_{2.5}$	52	AP-42, 12.9-1
	Chromium	0.01	AP-42, 12.9-2
	Cobalt	0.01	AP-42, 12.9-2
	Manganese	3.18	AP-42, 12.9-2
	Nickel	0.01	AP-42, 12.9-2

Emission Source	Pollutant	Emission Factor Uncontrolled (0.1 lb/1000 lb of electrode consumed)	Emission Factor Source
	Phosphorous	0.08	Typical welding rod SDS with 0.008% Phosphorous

E = (X) * EF*(0.1 **lb/1000 lb electrode consumed**) * (1 ton/2000 lb.)
Where: E = emissions (tons)
X = **lb electrode consumed**

7. Insignificant Activities

Equipment	Quantity	PTE (tpy)	Basis for Exemption
VOC Storage Tanks 250 gal or less	1	0.01 VOC	Regulation 1.02, Appendix A
Boiler, Power Flame Burner, C2-G-20A, natural gas 2.5 MMBtu/hr, Columbia Boiler, Model MPH-50, Firebox HX	1	1.07 NOx 0.006 SO_2 0.059 VOC	Regulation 1.02, Appendix A
Brazing, Soldering, or Welding Equip.	1	0.01 PM_{10}; 0.001 total HAPs	Regulation 1.02, Appendix A
Organics Tank (T202) carbon steel, glass lined, closed tank, vented to C1, 5000 gallons	1	0.14 VOC; 0.15 total HAPs	Regulation 1.02, Appendix A

1) Insignificant activities identified in District Regulation 1.02, Appendix A, may be subject to size or production rate disclosure requirements.

2) Insignificant activities identified in District Regulation 1.02, Appendix A shall comply with generally applicable requirements.

3) The owner or operator shall annually submit an updated list of insignificant activities that occurred during the preceding year, with the compliance certification due April 15th.

4) Emissions from Insignificant Activities shall be reported in conjunction with the reporting of annual emissions of the facility as required by the District.

5) The owner or operator may elect to monitor actual throughputs for each of the insignificant activities and calculate actual annual emissions, or use Potential to Emit (PTE) as the annual emissions for each piece of equipment.

6) The District has determined that no monitoring, record keeping, or reporting requirements apply to the insignificant activities listed, except for the equipment that has an applicable regulation and permitted under an insignificant activity (IA) unit.

8. Basis of Regulation Applicability for IA units

a. Emission Unit IA1 – Boiler

i. Equipment

Emission Point	Description	Applicable Regulation	Basis for Applicability
E13	Boiler, Power Flame Burner, C2-G-20A, natural gas 2.5 MMBtu/hr, Columbia Boiler, Model MPH-50, Firebox HX	7.06	Regulation 7.06 establishes the requirements for indirect heat exchanger having input capacity of more than one million BTU per hour commenced after September 1, 1976.

i. Standards/Operating Limits

1) Opacity

(a) Regulation 7.06, section 4.2 establishes opacity standards for the boilers.

(b) A determination has been made that a natural gas-fired boiler should inherently meet the opacity standard.

2) PM

(a) Indirect water heater, the 2.5 MMBtu/hr (boiler), installed in 2015, is subject to Regulation 7.06. The emission standard for PM is determined in accordance with Regulation 7.06, section 4.1.1 as follows:
Total Heat Input Capacity = 2.5 MMBtu/hr
PM limit = 0.56 lb/MMBtu

(b) A one-time compliance demonstration using AP-42 emission factors has been performed for PM and SO_2 emissions. This demonstration showed that emission standards cannot be exceeded when

combusting natural gas. Therefore, there are no monitoring, recordkeeping, or reporting requirements for PM for natural gas.

3) **SO_2**

(a) Indirect water heater, the 2.5 MMBtu/hr (boiler), installed in 2015, is subject to Regulation 7.06. The emission standard for SO_2 is determined in accordance with Regulation 7.06, section 5.1.1 as follows:
Total Heat Input Capacity = 2.5 MMBtu/hr
SO_2 limit = 1.0 lb/MMBtu

(b) A one-time compliance demonstration using AP-42 emission factors has been performed for PM and SO_2 emissions. This demonstration showed that emission standards cannot be exceeded when combusting natural gas. Therefore, there are no monitoring, recordkeeping, or reporting requirements for SO_2 for natural gas.